

REMARKS

Claims 1-4, 8-54 and 58-72 are rejected under 35 U.S.C. 102(e) as being anticipated by Ollivier, *et al.* (U.S. Patent Number 6,738,881). Claims 5-7 and 55-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ollivier, *et al.* In view of the amendments to the claims and the following remarks, the rejections are respectfully traversed, and reconsideration of the rejections is requested.

In the present invention as claimed in claims 1-22, a system for transferring a signal to a channel includes a storage unit associated with the channel for storing source identification information of a plurality of sources and indicating an order of priority of the plurality of sources for access to the channel. The system further includes a plurality of selection circuits for receiving input signals from the sources, each of the selection circuits selecting one of the plurality of input signals. The system further includes a circuit for checking outputs of the selection circuits and forwarding selected input signals to the channel, such that the signal is forwarded to the channel according to the priorities associated with the sources.

Claims 1-22 are amended to clarify that the storage unit associated with the channel indicates an order of priority of the plurality of sources for access to the channel. It is believed that these amendments to the claims clarify the distinctions between the claimed invention and the cited references.

In the present invention as claimed in claims 23-36, a system for transferring signals to channels includes a plurality of storage units, each storage unit being associated with one of the channels, and each storage unit being adapted to store source identification information for each of the sources that can transfer input signals to the associated channel and indicating an order of priority of the sources for access to the channel. The system further includes a plurality of selection circuits for receiving input signals from the sources, each of the selection circuits selecting one of the plurality of input signals. The system further includes a circuit for checking outputs of the selection circuits and forwarding selected input signals to the channel, such that the signals are forwarded to the channels according to the priorities associated with the sources.

Claims 23-36 are amended to clarify that each of the storage units associated with one of the channels indicates an order of priority of the sources for access to the channel.

It is believed that these amendments to the claims clarify the distinctions between the claimed invention and the cited references.

In the present invention as claimed in claims 37-50, a direct memory access (DMA) controller for controlling transfer of signals from input sources to output devices, a plurality of channels being connected to the output devices, includes a plurality of storage units, each storage unit being associated with one of the channels, and each storage unit being adapted to store source identification information for each of the sources that can transfer input signals to the associated channel and indicating an order of priority of the sources for access to the channel. The system further includes a plurality of selection circuits for receiving input signals from the sources, each of the selection circuits selecting one of the plurality of input signals. The system further includes a circuit for checking outputs of the selection circuits and forwarding selected input signals to the channel, such that the signals are forwarded to the channels according to the priorities associated with the sources.

Claims 37-50 are amended to clarify that each of the storage units associated with one of the channels indicates an order of priority of the sources for access to the channel. It is believed that these amendments to the claims clarify the distinctions between the claimed invention and the cited references.

In the present invention as claimed in claims 51-72, a method of transferring a signal to a channel includes storing source identification information for a plurality of sources and indicating an order of priority of the plurality of sources for access to the channel in a storage unit associated with the channel. The method further includes providing a plurality of selection circuits for receiving input signals from the sources, each of the selection circuits selecting one of the plurality of input signals. The method further includes, with a checking circuit, checking outputs of the selection circuits and forwarding a selected input signal to the channel, such that the signal is forwarded to the channel according to the priorities associated with the sources.

Claims 51-72 are amended to clarify that the storage unit associated with the channel indicates an order of priority of the plurality of sources for access to the channel. It is believed that these amendments to the claims clarify the distinctions between the claimed invention and the cited references.

Ollivier, *et al.* discloses that when several channels require access to a DMA port, they send requests to the DMA port. The DMA port computes which request it is going to serve using a scheduler. Round robin service is used to assure all of the requests waiting for service will be served. The scheduling is independent of the resource to which the port is connected; therefore, the same scheduling algorithm is used for all ports. The scheduler scans all the channels descriptor registers (a source descriptor 650, a destination descriptor 652 and enable descriptor 620) and FIFO counters to determine if requests are waiting to be served. Each possible request is given a request identifier. If there are several requests waiting, they are served on a round robin scheme. If request r is the current request served, the next request served will be $r+1$.

Ollivier, *et al.* fails to teach or suggest a system for transferring a signal to a channel which includes a storage unit associated with the channel for storing source identification information of a plurality of sources and indicating an order of priority of the plurality of sources for access to the channel, and a circuit for checking outputs of the selection circuits and forwarding selected input signals to the channel, such that the signal is forwarded to the channel according to the priorities associated with the sources, as claimed in claims 1-22. In addition, Ollivier, *et al.* fails to teach or suggest a system for transferring signals to channels includes a plurality of storage units, each storage unit being associated with one of the channels, and each storage unit being adapted to store source identification information for each of the sources that can transfer input signals to the associated channel and indicating an order of priority of the sources for access to the channel, and a circuit for checking outputs of the selection circuits and forwarding selected input signals to the channel, such that the signals are forwarded to the channels according to the priorities associated with the sources, as claimed in claims 23-36. Further, Ollivier, *et al.* fails to teach or suggest a direct memory access (DMA) controller that includes a plurality of storage units, each storage unit being associated with one of the channels, and each storage unit being adapted to store source identification information for each of the sources that can transfer input signals to the associated channel and indicating an order of priority of the sources for access to the channel, and a circuit for checking outputs of the selection circuits and forwarding selected input signals to the channel, such that the signals are forwarded to the channels according to the priorities associated with the sources, as claimed in claims 37-50. In addition, Ollivier, *et*

al. fails to teach or suggest a method of transferring a signal to a channel which includes storing source identification information for a plurality of sources and indicating an order of priority of the plurality of sources for access to the channel in a storage unit associated with the channel, and, with a checking circuit, checking outputs of the selection circuits and forwarding a selected input signal to the channel, such that the signal is forwarded to the channel according to the priorities associated with the sources, as claimed in claims 51-72.

Instead, in Ollivier, *et al.*, the scheduling is independent of the resource to which the port is connected and uses a round robin service. Therefore, there is no order of priority of the resources. Rather, the order in which the requests of the channels are served is determined independent of the resource. In Ollivier, *et al.*, the request of a channel served by the port is not determined according to priorities associated with the sources, as claimed, as there are no priorities associated with the sources in Ollivier, *et al.* The Office Action states at page 3, Section 5, that source register 650, destination register 652 and enable register 654 are analogous to the claimed storage unit. The applicants respectfully disagree. The claimed storage unit stores source identification information of a plurality of sources and indicates an order of priority of the plurality of sources for access to the channel. However, the source register 650, the destination register 652, and the enable register 654 in Ollivier, *et al.* do not store priorities of the plurality of sources or the order of priority of the plurality of sources. In addition, Ollivier, *et al.* fails to teach or suggest that the signal is forwarded to the channel according to the priorities associated with the sources. That is, Ollivier, *et al.* fails to teach or suggest that the priorities of the channels may be determined based on the priorities stored in the storage unit.

Ollivier fails to teach or suggest certain elements of the invention set forth in claims 1-22, 23-36, 37-50 and 51-72, as discussed above. Therefore, it is believed that the amended claims are allowable over the cited reference, and reconsideration of the rejections of claims 1-4, 8-54 and 58-72 under 35 U.S.C. 102(e) as being anticipated by Ollivier, *et al.*, and the rejections of claims 5-7 and 55-57 under 35 U.S.C. § 103(a) based on Ollivier, *et al.* is respectfully requested.

In view of the amendments to the claims and the foregoing remarks, it is believed that all claims pending in the application are in condition for allowance, and such


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allowance is respectfully solicited. If a telephone conference will expedite prosecution of the application, the Examiner is invited to telephone the undersigned.

There are no fees believed due at this time, however, authorization is hereby given to charge Deposit Account No. 501798 for any fees which may be due.

Respectfully submitted,

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